

CURRICULUM VITAE

Samuel H. Wilson

Place of Birth: USA

Married - 2 children

Education:

1961 B.A. University of Denver

1968 M.D. Harvard University

Professional Employment:

1996 - Present	Head, DNA Repair and Nucleic Acid Enzymology Group, Laboratory of Structural Biology (now Genome Integrity and Structural Biology Laboratory), National Institute of Environmental Health Sciences (NIEHS), NIH
2007 - 2009	Director (acting), NIEHS, NIH, & National Toxicology Program (NTP), DHHS
1996 - 2007	Deputy Director, NIEHS, NIH, & NTP, DHHS
1991 - 1996	Founding Director, Sealy Center for Molecular Science, University of Texas Med. Br.
1986 - 1992	Chief, Nucleic Acid Enzymology Section, Laboratory of Biochemistry, National Cancer Institute (NCI), NIH
1970 - 1992	Principal Investigator, Laboratory of Biochemistry, NCI, NIH
1968 - 1970	Postdoctoral Fellow (Research Associate) Laboratory of Biochemical Genetics (Advisor - Marshall Nirenberg), National Heart Institute, NIH
1967 - 1968	Postdoctoral Fellow, Department of Biochemistry (Advisor - Mahlon Hoagland), Dartmouth Medical School
1964 - 1966	Student Research Associate, Department of Bacteriology and Immunology (Advisor - Mahlon Hoagland), Harvard Medical School, Harvard University
1961 - 1962	Graduate Fellow, Department of Chemistry (Advisors – Joseph J. Schmidt-Collerus and John A. Krimmel), Denver Research Institute, University of Denver

Awards & Honorary Lectures (selected since 2009):

2019 Keynote Speaker, Smerdon-Reeves Symposium, Washington State Univ.
2017 Keynote Speaker, 48th Annual Meeting of the EMGS
2016 NIEHS-NIH Champion of Environmental Health Research Award
2016 Keynote Lecturer, 18th Midwest DNA Repair Meeting
2015 NIH Director's Award (Ruth L. Kirschstein Mentoring Award)
2014 NIEHS-NIH, Division of Intramural Research, Mentor of the Year Award
2014 SER-CAT Outstanding Science Award and Lecture
2013 Keynote Speaker, 38th FEBS Congress Symposium, St. Petersburg, Russia
2013 Joseph Coleman Memorial Lecture, Yale University
2012 19th Granville H. Sewell Lecture, Columbia University
2011 Keynote Lecture, Gordon Research Conference in Genetic Toxicology, Barga, Italy
2010 Honorary Lecturer, 2010 Fukuoka Dental College Symposium, Fukuoka, Japan
2010 EMS Award and Lecture, Environmental Mutagen Society Annual Meeting, Ft. Worth
2010 Keynote Speaker, 2010 Intl. Conf. on Biomed. & Environ. Sci. and Technology, Beijing
2009 Nakamura Memorial Lectureship, 40th Princess Takamatsu Symposium, Tokyo
2009 Plenary Lecture, 10th Intl. Conf. on Environmental Mutagens, Italy
2009 Elected Fellow of the AAAS

Postdoctoral Fellows and Research Associates:

2018-present, C. Nadalutti; 2015-present, Y. Rodriguez; 2014-present, J. Jamsen; 2015-2018, M. Howard; 2013-2018, M. Caglayan; 2013-2015 N. Dyrkheeva; 2010-2015, B. Freudenthal; 2010-2015, N. Gassman; 2011-2013, A. Sassa; 2009-2012, N. Cavanaugh; 2007-2012, M. Heacock; 2005-2012, A. Masaoka; 2003-2010, Y. Liu; 2003-2010, K. Asagoshi; 2002-2006, E. Braithwaite; 2005, E. Speina; 2002-2003, C. Cistulli; 1998-2003, M. Ghosh; 1993-2002, R. Sobol; 1992-1999, 2001-2002, D. Srivastava; 1997-2001, B. Vande Berg; 1999-2000, D. Kolpachtchikov; 1999-2000, G. Belova; 1997-2000, A. Robertson; 1998-1999, J. Krahn; 1992-1999, X.-P. Yang; 1994-1996, J. Chyan; 1992-1996, R. Singhal; 1991-1996, F. He; 1991-1996, K.-H. Chen; 1991-1996, S. Narayan; 1990-1995, M. Jaju; 1991-1994, R. Prasad; 1992-1993, R. Kim; 1991-1993, H. Idriss; 1991-1993, R. Goel; 1989-1992, W. Beard; 1989-1991, J. Casas-Finet; 1989-1991, S.-J. Kim; 1989-1991, A. Kumar; 1989-1991, E. Englander; 1987-1991, J. Abbotts; 1986-1991, S. Widen; 1988-1990, C. Majumdar; 1987-1990, P. Kedar; 1985-1987, P. Kumar; 1984-1987, D. Sen Gupta; 1984-1987, F. Cobianchi; 1982-1984, A. Hazra; 1981-1984, E. Karawya; 1980-1984, P. Becerra; 1979-1984, S. Detera; 1979-1984, K. Tanabe; 1980-1983, S. Planck; 1977-1980, Y.-C. Chen; 1978-1979, T. Marshall; 1975-1976, M. Sivarajan; 1972-1975, A. Matsukage.

Sabbatical or Senior Associates:

2001-present, V. Batra; 1996-present, J. Horton; 1991-present, R. Prasad; 1991-present, W. Beard; 2016-2018, Da-Peng Dai; 1999-2012, P. Kedar; 2006-2010, M. Carrozza; 2002-2009, V. Poltoratsky; 2006-2007, Z. Zhang; 1994-1995, 1999-2000, and 2001-2002, O. Lavrik; 1995-1996, 2002, and 2017, P. Strauss; 2000-2002, S.-J. Kim; 2001, H. Idriss; 1999, and 2000, S. DeLauder; 1997, A. Slesarev; 1990, F. Cobianchi; 1985, K. Tanabe; 1984-1990, B.Z. Zmudzka.; 1984 and 1988, A. Matsukage.

Senior and Junior Associates in Administration:

2001-2002, M. Yudell (graduate student); 2000-2001, C. Miller (sabbatical); 1997, G. LeMasters (sabbatical).

Graduate Student Thesis Research Advisor:

Degree in 1978	W. Zellmer, Dept. of Zoology, Auburn Univ
Degree in 1978	E.W. Bohn, Dept. of Chemistry, American Univ
Degree in 1985	J. Swack, Dept. of Biochemistry, George Washington Univ
Degree in 1997	T. Molina, Dept. of Human Biological Chemistry and Genetics, UTMB
Degree in 2007	N. Palma, Dept. of Cellular Biology, Univ of Seville, Spain

Journal Editorships: (selected since 1997)

2011 – present	Editor-in-Chief, <i>DNA Repair</i>
2008 – 2014	Editorial Board, <i>Nucleic Acids Research</i>
2000 – 2011	Associate Editor, <i>DNA Repair</i>
1999 – 2006	Editorial Board, <i>Annual Review of Medicine</i>
1992 – 1997	Editorial Board, <i>Journal of Biological Chemistry</i>

Book Editor or Co-Editor:

The Eukaryotic Nucleus: Molecular Biochemistry and Macromolecular Assemblies, Vol. 1-2. Strauss, P.R., Wilson, S.H. (eds.), The Telford Press/CRC Press, 1990.

Cancer Biology and Biosynthesis. Wilson, S.H. (ed.), CRC Press, 1991.
Base Excision Repair, Progress in Nucleic Acids Research and Molecular Biology. Mitra, S., McCullough, A., Lloyd, R.S., and Wilson, S.H. (eds.), Academic Press, 2001.
 Biomarkers of Environmentally Associated Disease: Technologies, Concepts, and Perspectives. Wilson, S.H., and Suk, W. (eds.), CRC Press, 2002.

National/International Committees and Other Activities Outside NIH: (selected since 2000)

2019	Sci Adv, DNA Repair and Genome Integrity Program, Tufts Univ
2015	Session Chair and Speaker, Intl Congress of Radiation Research, Kyoto, Japan
2014 – present	Sci Adv Bd, Biomolecular Science Institute, Florida International Univ
2014	Co-Chair, 5 th Japan-US/US-Japan DNA Repair Meeting, Naruto, Japan
2013 – present	Sci Adv Bd, Cntr for Environmental Health Sciences, MIT
2011 – 2014	EU Sci Adv Bd
2011 – 2015	Norwegian Research Council Adv Bd
2010 – 2013	Sci Adv Comm, Burroughs Wellcome Fund Training Prog, Univ of Texas Health Sci Cntr
2010 – 2013	Adv Bd, The Netherlands Toxicogenomics Center, Leiden & Amsterdam
2010 – 2012	Co-Chair, 4 th Japan-US/US-Japan DNA Repair Meeting, Leesburg, VA
2010	Sci Adv Bd, Program at Stony Brook Univ.
2007 – 2009	Vice-Chair and Chair, Genetic Toxicology Gordon Research Conf, New London, NH
2009	Co-Chair, 3 rd US-EU/EU-US DNA Repair Meeting, Galveston
2008 – 2007	Co-Chair, 3 rd Japan-US/US-Japan DNA Repair Meeting, Sendai
2005	Co-Chair, 2 nd EU-US DNA Repair Meeting, Erice, Sicily
2004 – 2009	Sci Adv Bd, FAMRI Cntr, Weizmann Institute of Science, Rehovot
2004	Co-Chair, 2 nd Japan-US/US-Japan DNA Repair Meeting, Honolulu
2003 – 2009	Program Committees, Intl Conferences on Environmental Mutagens
2003	Co-Chair, US-EU/EU-US DNA Repair Meeting, Leesburg, VA
2003	Co-Organizer, Symposium on Gene-Environment Interaction, NIH, Bethesda
2002	Co-Chair and Co-Organizer, Marshall Nirenberg Symposium NIH, Bethesda
2002	Co-Chair, 1 st Japan-US/US-Japan DNA Repair Meeting, Sendai
2000 – 2001	Council Member, American Society for Biochemistry and Molecular Biology
1998 – 2009	Founding Member, NAS/IOM Roundtable on Environmental Health Sci, Washington, DC
1997 – 2001	Vice-Chair and Chair, Mammalian DNA Repair Gordon Research Conf., Ventura, C

Invited Laboratory Research Presentations: (selected since 2010)

Gordon Research Conf., Ventura, CA, February, 2019
 Friedrich Miescher Institute, Basel, Switzerland, October, 2018
 Van Houten Symposium, Durham, NC, October, 2018
 5th Intl. Meeting on DNA Polymerases, Leiden, The Netherlands, September, 2018
 Wallace Symposium, Burlington, VT, June, 2018
 University of Kansas Medical Center, February, 2018
 6th EU-US DNA Repair Meeting, Udine, Italy, September, 2017
 Mitra Symposium, Houston, July, 2017
 6th US-Japan DNA Repair Meeting, Berkeley, CA, May, 2017
 Hanawalt Symposium, Asilomar, CA, May, 2017
 Gordon Research Conf., Ventura, CA, February, 2017
 4th Intl. Meeting on DNA Polymerases, Biarritz, France, October, 2016

Eurotox 2016 Congress Symposium, Seville, Spain, September, 2016
Jiricny Symposium, Zurich, July, 2016
Gordon Research Conf., Girona, Spain, June, 2016
DNA Repair Symposium, Egmond, The Netherlands, April, 2016
Gordon Research Conf., Ventura, CA, March, 2016
Univ. of Maryland Baltimore County, February, 2016
Wayne State Univ., September, 2015
Genome Stability Symposium, Univ. of Pittsburgh, June, 2015
Smerdon-Reeves Symposium, Pullman, WA, May, 2015
Gordon Research Conf., Ventura, CA, February, 2015
Krokan Symposium, Trondheim, Norway, February, 2015
Tulane Univ. Cancer Center, December, 2014
Univ. of North Carolina-Charlotte, November, 2014
5th US-EU DNA Repair Meeting Santa Fe, NM, November, 2014
15th IUBMB 24th FAOBMB-TSBMB Conference, Taipei, October, 2014
5th US-Japan DNA Repair Meeting, Naruto, Japan, October, 2014
MD Anderson Cancer Center, September, 2014
ACS Annual Meeting, San Francisco, August, 2014
ASBMB Annual Meeting, San Diego, April, 2014
SER-CAT Meeting, Rockville, MD, April, 2014
Gordon Research Conf., Ventura, CA, February, 2014
EMGS Annual Meeting, Monterey, CA, September, 2013
DNA Replication, Repair and Recombination Meeting, Telluride, CO, June, 2013
Univ. of California-Davis, April, 2013
Univ. of North Carolina-Chapel Hill, March, 2013
Gordon Research Conf, Ventura, CA, February, 2013
Cantoblanco Workshop, Madrid, Spain, June, 2012
3rd Erling Seeberg Symposium, Trondheim, Norway, June, 2012
4th US-Japan DNA Repair Meeting, Leesburg, VA, April, 2012
Society of Toxicology Annual Meeting, San Francisco, March, 2012
Gordon Research Conference, Ventura, CA, March, 2012
Florida Intl Univ., Miami, February, 2012
Genetic Mechanisms of Aging and Genome Maintenance Meeting, Alyeska, AK, July 2011
4th US-EU DNA Repair Meeting, Oslo, Norway, May, 2011
Gordon Research Conf., Ventura, CA, February, 2011
Intl. Workshop on BER, Brain Function and Aging, Hyderabad, India, January, 2011
Japanese National Institute for Health, Tokyo, Japan, December, 2010
Japanese Molecular Biology Society, Kobe, Japan, December, 2010
Workshop on DNA Repair, Northern Virginia, VA, September, 2010
Gordon Research Conf., Ventura, CA, March, 2010

Bibliography (Peer-reviewed journal articles):

ORCID Number: 0000-0002-1702-5293

ResearcherID Number: E-6644-2019

Janoshazi AK, JK Horton, ML Zhao, R Prasad, EL Scappini, CJ Tucker and SH Wilson. **Shining light on the response to repair intermediates in DNA of living cells.** *DNA repair* (2020) v. 85 pp. 102749

Howard MJ, NA Cavanaugh, VK Batra, DD Shock, WA Beard and SH Wilson. **DNA polymerase beta nucleotide-stabilized template misalignment fidelity depends on local sequence context.** *The Journal of biological chemistry* (2020) v. 295 (2): pp. 529-538

Rodriguez Y, JK Horton and SH Wilson. **Histone H3 Lysine 56 Acetylation Enhances AP Endonuclease 1-Mediated Repair of AP Sites in Nucleosome Core Particles.** *Biochemistry* (2019) v. 58 (35): pp. 3646-3655

Oertell K, J Florián, P Haratipour, DC Crans, BA Kashemirov, SH Wilson, CE McKenna and MF Goodman. **A Transition-State Perspective on Y-Family DNA Polymerase η Fidelity in Comparison with X-Family DNA Polymerases λ and β .** *Biochemistry* (2019) v. 58 (13): pp. 1764-1773

Jang S, N Kumar, EC Beckwitt, M Kong, E Fouquerel, V Raptic-Otrin, R Prasad, SC Watkins, C Khuu, C Majumdar, SS David, SH Wilson, MP Bruchez, PL Opresko and B Van Houten. **Damage sensor role of UV-DDB during base excision repair.** *Nature structural & molecular biology* (2019) v. 26 (8): pp. 695-703

Howard MJ, KG Foley, DD Shock, VK Batra and SH Wilson. **Molecular basis for the faithful replication of 5-methylcytosine and its oxidized forms by DNA Polymerase β .** *The Journal of biological chemistry* (2019) v. pp.

Dai DP, R Prasad, PR Strauss and SH Wilson. **The Pol beta variant containing exon alpha is deficient in DNA polymerase but has full dRP lyase activity.** *Scientific reports* (2019) v. 9 (1): pp. 9928

Beard WA and SH Wilson. **DNA polymerase beta and other gap-filling enzymes in mammalian base excision repair.** *The Enzymes* (2019) v. 45 pp. 1-26

Smith MR, DD Shock, WA Beard, MM Greenberg, BD Freudenthal and SH Wilson. **A guardian residue hinders insertion of a Fapy*dGTP analog by modulating the open-closed DNA polymerase transition.** *Nucleic Acids Research* (2019)

Prasad R, JK Horton, DP Dai and SH Wilson. **Repair pathway for PARP-1 DNA-protein crosslinks.** *DNA Repair* (2019) v. 73 pp. 71-77

Oertell K, J Florian, P Haratipour, DC Crans, BA Kashemirov, SH Wilson, CE McKenna and MF Goodman. **A Transition-State Perspective on Y-Family DNA Polymerase η Fidelity in Comparison with X-Family DNA Polymerases λ and β .** *Biochemistry* (2019)

Howard MJ, KG Foley, DD Shock, VK Batra and SH Wilson. **Molecular basis for the faithful replication of 5-methylcytosine and its oxidized forms by DNA polymerase beta.** *Journal of Biological Chemistry* (2019) v. 294 (18): pp. 7194-7201

Beard WA, JK Horton, R Prasad and SH Wilson. **Eukaryotic Base Excision Repair: New Approaches Shine Light on Mechanism.** *Annual review of biochemistry* (2019) v. 88 pp. 137-162

Wilson SH and J Abbotts. **tRNA in the molecular biology of retroviruses.** *Transfer RNA in Protein Synthesis*; 2018: 1-21.

Oertell K, BA Kashemirov, A Negahbani, C Minard, P Haratipour, KS Alnajjar, JB Sweasy, VK Batra, WA Beard, SH Wilson, CE McKenna and MF Goodman. **Probing DNA Base-Dependent Leaving Group Kinetic Effects on the DNA Polymerase Transition State.** *Biochemistry* (2018) v. 57 (26): pp. 3925-3933

Howard MJ and SH Wilson. **DNA scanning by base excision repair enzymes and implications for pathway coordination.** *DNA Repair* (2018) v. 71 pp. 101-107

Horton JK, DF Stefanick, M Caglayan, ML Zhao, AK Janoshazi, R Prasad, NR Gassman and SH Wilson. **XRCC1 phosphorylation affects aprataxin recruitment and DNA deadenylation activity.** *DNA Repair* (2018) v. 64 pp. 26-33

Hanawalt PC and SH Wilson. **Cutting-edge perspectives in genomic maintenance V.** *DNA Repair* (2018) v. 71 pp. 1-2

DeRose EF, TW Kirby, GA Mueller, WA Beard, SH Wilson and RE London. **Transitions in DNA polymerase beta mus-ms dynamics related to substrate binding and catalysis.** *Nucleic Acids Research* (2018) v. 46 (14): pp. 7309-7322

Dai DP, W Gan, H Hayakawa, JL Zhu, XQ Zhang, GX Hu, T Xu, ZL Jiang, LQ Zhang, XD Hu, B Nie, Y Zhou, J Li, XY Zhou, J Li, TM Zhang, Q He, DG Liu, HB Chen, N Yang, PP Zuo, ZX Zhang, HM Yang, Y Wang, SH Wilson, YX Zeng, JY Wang, M Sekiguchi and JP Cai. **Transcriptional mutagenesis mediated by 8-oxoG induces translational errors in mammalian cells.** *Proc Natl Acad Sci U S A* (2018) v. 115 (16): pp. 4218-4222

Caglayan M and SH Wilson. **Pol mu dGTP mismatch insertion opposite T coupled with ligation reveals promutagenic DNA repair intermediate.** *Nature communications* (2018) v. 9 (1): pp. 4213

Batra VK, K Oertell, WA Beard, BA Kashemirov, CE McKenna, MF Goodman and SH Wilson. **Mapping Functional Substrate-Enzyme Interactions in the pol beta Active Site through Chemical Biology: Structural Responses to Acidity Modification of Incoming dNTPs.** *Biochemistry* (2018) v. 57 (26): pp. 3934-3944

Shock DD, BD Freudenthal, WA Beard and SH Wilson. **Modulating the DNA polymerase beta reaction equilibrium to dissect the reverse reaction.** *Nature chemical biology* (2017) v. 13 (10): pp. 1074-1080

Rodriguez Y, MJ Howard, MJ Cuneo, R Prasad and SH Wilson. **Unencumbered Pol beta lyase activity in nucleosome core particles.** *Nucleic Acids Research* (2017) v. 45 (15): pp. 8901-8915

Prasad R, JK Horton, Y Liu and SH Wilson. **Central Steps in Mammalian BER and Regulation by PARP1;** 2017.

Prasad R, M Caglayan, DP Dai, CA Nadalutti, ML Zhao, NR Gassman, AK Janoshazi, DF Stefanick, JK Horton, R Krasich, MJ Longley, WC Copeland, JD Griffith and SH Wilson. **DNA polymerase beta: A**

missing link of the base excision repair machinery in mammalian mitochondria. *DNA Repair* (2017) v. 60 pp. 77-88

Perera L, BD Freudenthal, WA Beard, LG Pedersen and SH Wilson. **Revealing the role of the product metal in DNA polymerase beta catalysis.** *Nucleic Acids Research* (2017) v. 45 (5): pp. 2736-2745

Perera L, WA Beard, LG Pedersen and SH Wilson. **Hiding in Plain Sight: The Bimetallic Magnesium Covalent Bond in Enzyme Active Sites.** *Inorganic chemistry* (2017) v. 56 (1): pp. 313-320

Liu L, M Kong, NR Gassman, BD Freudenthal, R Prasad, S Zhen, SC Watkins, SH Wilson and B Van Houten. **PARP1 changes from three-dimensional DNA damage searching to one-dimensional diffusion after auto-PARYlation or in the presence of APE1.** *Nucleic Acids Research* (2017) v. 45 (22): pp. 12834-12847

Kirby TW, NR Gassman, CE Smith, ML Zhao, JK Horton, SH Wilson and RE London. **DNA polymerase beta contains a functional nuclear localization signal at its N-terminus.** *Nucleic Acids Res* (2017) v. 45 (4): pp. 1958-1970

Jamsen JA, WA Beard, LC Pedersen, DD Shock, AF Moon, JM Krahn, K Bebenek, TA Kunkel and SH Wilson. **Time-lapse crystallography snapshots of a double-strand break repair polymerase in action.** *Nat Commun* (2017) v. 8 (1): pp. 253

Howard MJ and SH Wilson. **Processive searching ability varies among members of the gap-filling DNA polymerase X family.** *Journal of Biological Chemistry* (2017) v. 292 (42): pp. 17473-17481

Howard MJ, Y Rodriguez and SH Wilson. **DNA polymerase beta uses its lyase domain in a processive search for DNA damage.** *Nucleic Acids Research* (2017) v. 45 (7): pp. 3822-3832

Horton JK, DF Stefanick, ML Zhao, AK Janoshazi, NR Gassman, HJ Seddon and SH Wilson. **XRCC1-mediated repair of strand breaks independent of PNKP binding.** *DNA Repair* (2017) v. 60 pp. 52-63

Horton JK, HJ Seddon, ML Zhao, NR Gassman, AK Janoshazi, DF Stefanick and SH Wilson. **Role of the oxidized form of XRCC1 in protection against extreme oxidative stress.** *Free Radical Biology & Medicine* (2017) v. 107 pp. 292-300

Hanawalt PC and SH Wilson. **Cutting-edge perspectives in genomic maintenance IV.** *DNA Repair* (2017) v. 56 pp. 1-3

Caglayan M and SH Wilson. **Role of DNA polymerase beta oxidized nucleotide insertion in DNA ligation failure.** *Journal of radiation research* (2017) v. 58 (5): pp. 603-607

Caglayan M and SH Wilson. **In vitro Assay to Measure DNA Polymerase beta Nucleotide Insertion Coupled with the DNA Ligation Reaction during Base Excision Repair.** *Bio-protocol* (2017) v. 7 (12)

Caglayan M, R Prasad, R Krasich, MJ Longley, K Kadoda, M Tsuda, H Sasanuma, S Takeda, K Tano, WC Copeland and SH Wilson. **Complementation of aprataxin deficiency by base excision repair enzymes in mitochondrial extracts.** *Nucleic Acids Research* (2017) v. 45 (17): pp. 10079-10088

Caglayan M, JK Horton, DP Dai, DF Stefanick and SH Wilson. **Oxidized nucleotide insertion by pol beta confounds ligation during base excision repair.** *Nature communications* (2017) v. 8 pp. 14045

Wilson SH and EC Friedberg. **Editorial.** *DNA Repair* (2016) v. 37 pp. A1

Sassa A, M Caglayan, Y Rodriguez, WA Beard, SH Wilson, T Nohmi, M Honma and M Yasui. **Impact of Ribonucleotide Backbone on Translesion Synthesis and Repair of 7,8-Dihydro-8-oxoguanine.** *Journal of Biological Chemistry* (2016) v. 291 (46): pp. 24314-24323

Prasad R, V Poltoratsky, EW Hou and SH Wilson. **Rev1 is a base excision repair enzyme with 5'-deoxyribose phosphate lyase activity.** *Nucleic Acids Research* (2016) v. 44 (22): pp. 10824-10833

Kim T, BD Freudenthal, WA Beard, SH Wilson and T Schlick. **Insertion of oxidized nucleotide triggers rapid DNA polymerase opening.** *Nucleic Acids Research* (2016) v. 44 (9): pp. 4409-24

Hanawalt PC and SH Wilson. **Cutting-edge Perspectives in Genomic Maintenance III: Preface.** *DNA Repair* (2016) v. 44 pp. 1-3

Gassman NR, E Coskun, P Jaruga, M Dizdaroglu and SH Wilson. **Combined Effects of High-Dose Bisphenol A and Oxidizing Agent (KBrO₃) on Cellular Microenvironment, Gene Expression, and Chromatin Structure of Ku70-deficient Mouse Embryonic Fibroblasts.** *Environmental health perspectives* (2016) v. 124 (8): pp. 1241-52

Cilli P, I Ventura, A Minoprio, E Meccia, A Martire, SH Wilson, M Bignami and F Mazzei. **Oxidized dNTPs and the OGG1 and MUTYH DNA glycosylases combine to induce CAG/CTG repeat instability.** *Nucleic Acids Research* (2016) v. 44 (11): pp. 5190-203

Batra VK, WA Beard, LC Pedersen and SH Wilson. **Structures of DNA Polymerase Mispaiored DNA Termini Transitioning to Pre-catalytic Complexes Support an Induced-Fit Fidelity Mechanism.** *Structure* (2016) v. 24 (11): pp. 1863-1875

Prasad R, N Dyrkheeva, J Williams and SH Wilson. **Mammalian Base Excision Repair: Functional Partnership between PARP-1 and APE1 in AP-Site Repair.** *PLoS One* (2015) v. 10 (5): e0124269

Perera L, BD Freudenthal, WA Beard, DD Shock, LG Pedersen and SH Wilson. **Requirement for transient metal ions revealed through computational analysis for DNA polymerase going in reverse.** *Proc Natl Acad Sci U S A* (2015) v. 112 (38): pp. E5228-36

Kirby TW, NR Gassman, CE Smith, LC Pedersen, SA Gabel, M Sobhany, SH Wilson and RE London. **Nuclear Localization of the DNA Repair Scaffold XRCC1: Uncovering the Functional Role of a Bipartite NLS.** *Scientific reports* (2015) v. 5 pp. 13405

Kadina AP, BA Kashemirov, K Oertell, VK Batra, SH Wilson, MF Goodman and CE McKenna. **Two Scaffolds from Two Flips: (alpha,beta)/(beta,gamma) CH₂/NH "Met-Im" Analogues of dTTP.** *Organic letters* (2015) v. 17 (11): pp. 2586-9

Horton JK, NR Gassman, BD Dunigan, DF Stefanick and SH Wilson. **DNA polymerase beta-dependent cell survival independent of XRCC1 expression.** *DNA Repair* (2015) v. 26 pp. 23-9

Hanawalt PC and SH Wilson. **Cutting-edge Perspectives in Genomic Maintenance. Preface.** *DNA Repair* (2015) v. 32 pp. 1-2

Gassman NR and SH Wilson. **Micro-irradiation tools to visualize base excision repair and single-strand break repair.** *DNA Repair* (2015) v. 31 pp. 52-63

Gassman NR, E Coskun, DF Stefanick, JK Horton, P Jaruga, M Dizdaroglu and SH Wilson. **Bisphenol a promotes cell survival following oxidative DNA damage in mouse fibroblasts.** *PLoS One* (2015) v. 10 (2): e0118819

Freudenthal BD, WA Beard and SH Wilson. **New structural snapshots provide molecular insights into the mechanism of high fidelity DNA synthesis.** *DNA Repair* (2015) v. 32 pp. 3-9

Freudenthal BD, WA Beard, L Perera, DD Shock, T Kim, T Schlick and SH Wilson. **Uncovering the polymerase-induced cytotoxicity of an oxidized nucleotide.** *Nature* (2015) v. 517 (7536): pp. 635-9

Freudenthal BD, WA Beard, MJ Cuneo, NS Dyrkheeva and SH Wilson. **Capturing snapshots of APE1 processing DNA damage.** *Nature structural & molecular biology* (2015) v. 22 (11): pp. 924-31

Fedeles BI, BD Freudenthal, E Yau, V Singh, SC Chang, D Li, JC Delaney, SH Wilson and JM Essigmann. **Intrinsic mutagenic properties of 5-chlorocytosine: A mechanistic connection between chronic inflammation and cancer.** *Proc Natl Acad Sci U S A* (2015) v. 112 (33): pp. E4571-80

Caglayan M and SH Wilson. **Reprint of “Oxidant and environmental toxicant-induced effects compromise DNA ligation during base excision DNA repair”.** *DNA Repair* (2015) v. 36 pp. 86-90

Caglayan M and SH Wilson. **Oxidant and environmental toxicant-induced effects compromise DNA ligation during base excision DNA repair.** *DNA Repair* (2015) v. 35 pp. 85-9

Caglayan M, JK Horton and SH Wilson. **Enzymatic Activity Assays for Base Excision Repair Enzymes in Cell Extracts from Vertebrate Cells.** *Bio-protocol* (2015) v. 5 (11)

Caglayan M, JK Horton, R Prasad and SH Wilson. **Complementation of aprataxin deficiency by base excision repair enzymes.** *Nucleic Acids Research* (2015) v. 43 (4): pp. 2271-81

Beard WA and SH Wilson. **Structures of human DNA polymerases nu and theta expose their end game.** *Nature structural & molecular biology* (2015) v. 22 (4): pp. 273-5

Wu S, WA Beard, LG Pedersen and SH Wilson. **Structural comparison of DNA polymerase architecture suggests a nucleotide gateway to the polymerase active site.** *Chemical reviews* (2014) v. 114 (5): pp. 2759-74

Wilson SH. **Reflections on the Superfund Research Program: a tribute to its Founding Director, William A. Suk.** *DNA Repair* (2014) v. 22 pp. v-viii

Wilson SH. **The dark side of DNA repair.** *eLife* (2014) v. 3: e03068

Sassa A, M Caglayan, NS Dyrkheeva, WA Beard and SH Wilson. **Base excision repair of tandem modifications in a methylated CpG dinucleotide.** *Journal of Biological Chemistry* (2014) v. 289 (20): pp. 13996-4008

Prasad R, JK Horton, PD Chastain, 2nd, NR Gassman, BD Freudenthal, EW Hou and SH Wilson. **Suicidal cross-linking of PARP-1 to AP site intermediates in cells undergoing base excision repair.** *Nucleic Acids Research* (2014) v. 42 (10): pp. 6337-51

Perera L, WA Beard, LG Pedersen and SH Wilson. **Applications of quantum mechanical/molecular mechanical methods to the chemical insertion step of DNA and RNA polymerization.** *Advances in protein chemistry and structural biology* (2014) v. 97 pp. 83-113

Oertell K, BT Chamberlain, Y Wu, E Ferri, BA Kashemirov, WA Beard, SH Wilson, CE McKenna and MF Goodman. **Transition state in DNA polymerase beta catalysis: rate-limiting chemistry altered by base-pair configuration.** *Biochemistry* (2014) v. 53 (11): pp. 1842-8

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